IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of	Atty. Docket
ALEXANDER C. GEERLINGS ET AL.	PHNL021285US
Serial No.: 10/538,626	Group Art Unit: 2188
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METHOD AND CIRCUIT FOR OPERATING A STORAGE DEVICE

Commissioner for Patents
P.O. Box 1450
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Sir:

APPEAL BRIEF

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(i) Real Party in Interest

The real party in interest in this application is KONINKLIJKE PHILIPS ELECTRONICS N.V. by virtue of an assignment from the inventors recorded on June 10, 2005, at Reel 017084, Frame 0434.

(ii) Related Appeals and Interferences

There are no other appeals and/or interferences related to this application.

(iii) Status of Claims

Claims 1 and 3-20 stand finally rejected by the Examiner, claim 2 having been cancelled. Appellants hereby appeal the rejections of claims 1 and 3-20.

(iv) Status of Amendments

There was one Response filed on December 10, 2009, after final rejection of the claims on November 2, 2009, this Response having been considered and entered by the Examiner.

(v) Summary Of Claimed Subject Matter

Vibrations generated by, e.g., loudspeakers may disturb the functionality of a storage device. Examples of this are numerous, especially in the case of a disk-based memory like a Digital Versatile Disc or a hard disk drive. Vibrations propagating into the actuator or disk assembly are viewed as external disturbances, which makes it more difficult for the pick-up unit to follow a track on the disk.

An apparatus is known that reduces the gain of at least certain frequency components of sound produced by a sound system when sound vibrations are expected to hamper the performance parameters of the apparatus. When the level of the output sound or at least of one frequency component of the output sound is too high, the gain of the sound or of that particular frequency component is reduced. The reduction of gain is aimed at preventing a negative influence of vibrations caused by a high sound level on components of the apparatus like a CD-player or a hard disk. The disclosed circuit always reduces the gain of the sound produced by the apparatus when it exceeds a certain threshold, irrespective of the operational performance of, e.g., the CD-player or the hard disk.

The subject invention, as claimed in claim 1, includes: "A method of operating a storage device sensitive to vibrations in an environment with a source of vibrations ***(Fig. 1: 108, 116, 118; specification page 6, lines 10-21)***, characterized in that the method comprises the following acts:

measuring the signal performance of the storage device ***(Fig. 1: 108, 150; specification page 7, lines 3-8)***; and

when the measured signal performance of the storage device decreases below a pre-determined level, taking action to reduce the influence of vibrations generated by the source of vibrations ***(specification page 7, lines 10-17)***, wherein the signal performance of the storage device includes at least one of access time of the storage device ***(specification page 7, lines 8-14)***, data access rate ***(specification page 7, lines 15-24)***, and data storage rate ***(specification page 2, lines 1-3)***."

In the method of the subject invention of claim 1, claim 4 claims:

"the action comprises an act of providing a message to a user to reduce the vibrations ***(specification page 7, lines 32-34)***."

In the method of the subject invention of claim 1, claim 5 claims:

"the source of vibrations is a first loudspeaker, and the first loudspeaker and the storage device are contained in the same housing ***(Fig. 2: 200, 210; specification page 8, lines 16-18)***, wherein the action comprises an act of switching sound reproduction from the first loudspeaker to a second loudspeaker that is remote from the storage device ***(Fig. 3: 300, 310, 320, 330, 340, 350; specification page 8, lines 23-28)***."

In the method of the subject invention of claim 1, claim 6 claims:

"wherein the source of vibrations is a loudspeaker ***(Fig. 2: 200, 210; specification page 8, lines 16-18)***, and the action comprises an act of reducing the volume of the sound produced by the loudspeaker ***(specification page 8, lines 18-21)***."

In the method of the subject invention of claim 1, claim 7 claims:

"when the measured signal performance decreases below the pre-determined level and the environmental temperature of the storage device is above a further pre-determined level, no action is taken ***(specification page 11, lines 11-18)***."

In the method of the subject invention of claim 5, claim 8 claims:

"the housing is a consumer electronics apparatus ***(Fig. 1: 100; specification page 5, lines 12-13)***;

the storage device is arranged to record an incoming stream of audio-visual data ***(Fig. 1: 100, 108; specification page 5, lines 25-26)***;

the consumer electronics apparatus is arranged to reproduce the incoming stream of audio-visual data by means of a display screen and the loudspeaker ***(Fig. 1: 100, 108, 116, 118, 120; specification page 5, lines 26-28)***; and

wherein the method further comprises acts of:

storing the incoming stream of audio-visual data on a disk by the storage device ***(Fig. 1: 100, 108; specification page 5, lines 25-26)***; and

reproducing the stored stream of audio-visual data stored on the disk by means of the display screen and the loudspeaker ***(Fig. 1: 100, 108, 116, 118, 120; specification page 5, lines 25-27)***."

In the method of the subject invention of claim 8, claim 9 claims:

"the action to reduce the influence of vibrations generated by the source of vibrations comprises an act of advising a user to render the incoming stream of audio-visual data instead of the stored stream of audio-visual data ***(specification page 8, lines 4-8)***."

In the method of the subject invention of claim 5, claim 10 claims:

"the housing is a consumer electronics apparatus arranged to reproduce audio-visual data ***(Fig. 1: 100; specification page 5, lines 12-20)***;

the second loudspeaker is not contained in the consumer electronics apparatus, the second loudspeaker being connected to the consumer electronics apparatus ***(Fig. 3: 300, 330, 340, 350; specification page 8, lines 25-28)***; and

the action comprises acts of:

reducing reproduction of the audio-visual data through the first loudspeaker contained in the consumer electronics apparatus ***(specification page 8, lines 30-31)***; and

starting or increasing reproduction of the audio-visual data through the second loudspeaker ***(specification page 8, line 31 to page 9, line 3)***."

In the method of the subject invention of claim 1, claim 11 claims:

"the source of vibrations is comprised by a first apparatus and the storage device is comprised by a second apparatus ***(Fig. 4: 430, 420; specification page 9, lines 13-16)***;

the first and the second apparatus are connected through a network link ***(Fig. 4: 430, 420, 450; specification page 9, lines 16-17)***; and

the action comprises an act of controlling the first apparatus by reducing the power of the vibrations caused by the source of vibrations ***(specification page 9, lines 21-23)***."

In the method of the subject invention of claim 1, claim 12 claims:

"the predetermined level is replaced by a further lower predetermined level when the measured signal performance of the storage device is below the predetermined level for a predetermined period ***(specification page 11, lines 1-10)***."

In the method of the subject invention of claim 1, claim 13 claims:

"the act of measuring the signal performance of the storage device comprises an act of keeping statistics on the signal performance of the storage device ***(specification page 7, lines 9-10)*** and the action is performed when the statistics drop below the predetermined level ***(specification page 7, lines 15-17)***."

In the method of the subject invention of claim 13, claim 14 claims:

"the statistics includes one of average access time of the storage device, median access time of the storage device, standard deviation of the access time of the storage device, and average bit-rate of the storage device ***(specification page 7, lines 8-17)***."

In the method of the subject invention of claim 1, claim 16 claims:

"the action comprises an act of halting activities related to the storage device other than storage and retrieval of audio-visual data ***(specification page 8, lines 9-13)***."

The subject invention further includes, as claimed in claim 17:

"A circuit for operating a storage device in an environment with a source of vibrations, the circuit comprising a processor ***(Fig. 1: 108, 150; specification page 1, lines 3-4)***, characterized in that the processor is arranged to:

measure the signal performance of the storage device ***(specification page 4, lines 28-29)***; and

when the measured signal performance of the storage device decreases below a pre-determined level, take action to reduce the influence of vibrations generated by the source of vibrations ***(specification page 4, lines 29-31)***, wherein the performance of the storage device includes at least one of access time of the storage device ***(specification page 7, lines 8-14)***, data access rate ***(specification page 7, lines 15-24)***, and data storage rate ***(specification page 2, lines 1-3)***."

The subject invention further includes, as claimed in claim 18:

"A consumer electronics apparatus ***(Fig. 1: 100; specification page 5, lines 12-13)*** comprising:

means for receiving a stream of audio-visual data ***(Fig. 1: 102, 104; specification page 5, lines 13-14, 18-20)***;

a storage device for storing the stream of audio-visual data on a disk ***(Fig. 1: 108; specification page 5, lines 25-26)***;

a source of vibrations ***(Fig. 1: 116, 118; specification page 6, lines 15-17)***; and

the circuit as claimed in claim 17 for operating the storage device ***(Fig. 1: 108, 150; specification page 7, lines 8-11)***."

In the consumer electronics apparatus of the subject invention of claim 18, claim 19 claims:

"the source of vibrations is a disk drive arranged to spin a disk in operation ***(Fig. 6: 600, 610, 620, 630; specification page 10, lines 16-21)***."

In the consumer electronics apparatus of the subject invention of claim 18, claim 20 claims:

"the source of vibrations is a loudspeaker ***(Fig. 1: 116, 118; specification page 6, lines 15-21)***."

(vi) Grounds of Rejection to be Reviewed on Appeal

(A) Whether the invention, as claimed in claims 1, 3-7, 11-15, 17, 19 and 20, is anticipated, under 35 U.S.C. 102(e), by U.S. Patent 6,424,606 to Okazaki et al.

(B) Whether the invention, as claimed in claim 18, is anticipated, under 35 U.S.C. 102(b), by U.S. Patent 4,831,449 to Kimura.

(C) Whether the invention, as claimed in claims 5-10 and 16, is unpatentable, under 35 U.S.C. 103(a), over Okazaki et al. in view of Kimura.

(vii) Arguments

(A) Whether Claims 1, 3-7, 11-15, 17, 19 and 20 Are Anticipated By Okazaki et al.

35 U.S.C. 102(e) states:

"A person shall be entitled to a patent unless –

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(e)the invention was described in – (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for the purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language; or ...."

The Okazaki et al. patent discloses a method for detecting vibration in a disc drive and apparatus therefor, in which photodiodes A-F detect a laser beam reflected from the surface of a rotating disc, and the outputs therefrom are applied to a vibration detector 190. Based on the amount of the determined vibration, a microcontroller 150 takes appropriate action, e.g., reducing the speed of rotation of the disc.

As noted in MPEP §2131, it is well-founded that "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California,* 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir.

1987). Further, "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Claims 1, 17

Claim 1 (as well as independent claim 17) relates to "a method of operating a storage device sensitive to vibrations in an environment with a source of vibrations" and includes the limitations "measuring the signal performance of the storage device" and "when the measured signal performance of the storage device decreases below a pre-determined level, taking action to reduce the influence of vibrations generated by the source of vibrations", and "wherein the signal performance of the storage device includes at least one of access time of the storage device, data access rate, and data storage rate".

The Examiner now states that Okazaki et al. teaches "measuring the signal performance of the storage device (e.g., see column 3, lines 37-39 "measuring the displacement of the pickup head assembly with tracking disabled to determine a vibration value" and the value of the vibration is a representation of the signal behavior)".

Appellants submit that the Examiner is mistaken. In particular, as a prelude to the cited passage, Okazaki et al., at col. 3, lines 23-27, states:

> "In still another aspect the present invention provides a method for detecting vibration in a read/write data

storage drive for a removable data storage media, wherein the removable data storage media has at least one data track thereon, the method comprising the steps of:"

While Okazaki et al. may be concerned about the performance of a data storage drive, clearly Okazaki et al. is detecting vibration in the data storage drive. In the passage cited by the Examiner, Okazaki et al. is clearly measuring a distance, i.e., the displacement of the pickup head assembly. While the displacement of the pickup head assembly due to vibration may eventually affect signal performance, measuring the displacement is not akin to measuring the signal performance of the storage device.

The Examiner then states that Okazaki et al. further teaches "when the measured performance of the storage device decreases below a pre-determined level taking action to reduce the influence of vibrations generated by the source of vibrations (e.g., see column 10, lines 16-27 "When the vibration value measured at resonance is greater than the predetermined vibration value limit, then the speed of operation is set 470 to low-speed mode, and the drive 100 is then operational 490 at the low speed. However, when the vibration value measured at resonance is less than the predetermined vibration value limit, then the speed of rotation is set 480 to high-speed mode, and the drive 100 is set to high speed. Low-speed refers to the speed of rotation of an unbalanced disc that will not cause annoyance to the user in the form of noise and vibration. High-speed refers to the maximum rated speed of the drive".)".

It should be apparent that Okazaki et al. seeks to reduce the amount of noise and vibration generated by a storage drive when operating with an unbalanced storage disk. However, this has nothing to do with the signal performance of the storage device.

Claim 1 further limits "the signal performance of the storage device" to "wherein the signal performance of the storage device includes at least one of access time of the storage device, data access rate, and data storage rate".

The Examiner attempts to find this limitation in Okazaki et al. and states "see column 6, lines 5-15 wherein the output behavior of the signal is including the access time (with regard reading data from the disc 105)".

The noted section of Okazaki et al. states:

> "To read data from the disc 105, the sum of the output signals from the photodiodes A, B, C and D (in FIG. 2) are fed to the RF amplifier 135 and passes through a differential amplifier to generate a RF signal (RFGO). This signal is provided to the DSP 120 to perform EFM signal demodulation, and the first and second layer of the error correction. Resulting serial data is provided to the CD-ROM decoder 155. The CD-ROM decoder 155 extracts the data for transmision to a host from the serial data, performs third layer error detection and correction code (EDC) and error correction code (ECC), and sends the corrected data to the host computer through the host interface 160."

It should be apparent from the above that Okazaki et al. is merely describing how data is read from the disk 105. However, contrary to the Examiner's assertion, there is no statement regarding "access time", nor the measurement of any "access time". Further, Appellants would like to point out that the claim limitation "wherein the signal performance of the storage device

includes at least one of access time of the storage device, data access rate, and data storage rate" is not arbitrarily inserted into the claim, but rather, describes terms appearing in the claim, to wit, "the signal performance of the storage device". Hence, quite clearly, the measurement of displacement of the pickup head assembly is not included in the group of "access time of the storage device, data access rate, and data storage rate".

The Examiner now states:

> "However, in column 3, lines 1-22, the reference teaches more than one control subsystem that monitors system performance (for example, lines 2-4 describe the control subsystem detecting the at least one data track and moving the pickup head assembly to maintain focus on the at least one data track;" this subsystem also monitors and maintains reliable data transfer between pickup head assembly and the at least one data track (see lines 7-12). Data is transferred using signals, so monitoring and adjusting system performance with regard to data transfer is equivalent to measuring and adjusting signal performance."

Quite obviously, there are various control loops **within** the disc drive of Okazaki et al., for example, those that control the tracking of the pickup head to the disc. However, there is no disclosure or suggestion of monitoring the (overall) signal performance of the disc drive.

The Examiner further adds:

> "The applicant argues further that Okazaki fails to teach the limitation in claim 1 of "when a measured performance of the storage device decreases below a pre-determined level taking action to reduce the influence of vibrations generated by the source of vibrations." However, in column 3, lines 13-23, Okazaki discloses "disabling the tracking between the pickup head assembly and the at least one data track prior to detecting movement of the pickup head, for determining whether the movement of the pickup head is within at least one predetermined limit, and for changing relative speed of movement between the pickup head and the removable storage

media to bring the movement of the pickup head within the at least one predetermined limit."

Appellants submit that this has nothing to do with the cited limitation of claim 1. In particular, Okzaki et al. is describing the process of disabling the tracking control, and measuring or determining the amount of movement of the pickup head. If this movement is within a predetermined limit, and changing the relative speed of movement of the pickup head to the storage media (disk) to bring the movement within the predetermined limit.

Again, Appellants assert that the determining the movement of the pickup head and modifying the rotational speed of the disk, is not equivalent to monitoring the signal performance of the storage device, and taking action to reduced the influence of vibrations.

Finally, the Examiner adds:

> "he (sic) applicant argues further that Okazaki fails to disclose the limitation in claim 1 of "wherein the signal performance of the storage device includes at least one of access time of the storage device, data access rate, and data storage rate." However, in column 4, lines 46-67, and column 5, lines 1-4, Okazaki describes the role of output signals from the photodiodes A-F as representing information stored on the disk; thus by monitoring and adjusting system vibration, the operation of the photodiodes is maintained, which results in the data access rate being monitored and maintained in the case of reading the track."

Appellants acknowledge that the output signals from the photodiodes A-F represent information stored on the disk. However, that which is disclosed by Okazaki et al. is that system vibration is monitored and adjustments are made to reduce the detected vibration. However, again, there is no disclosure or suggestion in Okazaki et al. of "measuring the signal performance of the storage device" and "when the measured signal performance of the storage

device decreases below a pre-determined level, taking action to reduce the influence of vibrations generated by the source of vibrations", and "wherein the signal performance of the storage device includes at least one of access time of the storage device, data access rate, and data storage rate".

Claim 3

Claim 3 includes the limitation "wherein the signal performance of the storage device is indicated by an average bit-rate of the storage device."

The Examiner has indicated "Okazaki discloses wherein the signal performance of the storage device is indicated by an average bit-rate of the storage device (see column 5, lines 1-19 wherein in this operation ensuring the high signal to- noise ratio indicates the average of the bit rate)."

Appellants respectfully submit that the Examiner is mistaken. In particular, the noted section of Okazaki et al. states:

> "by an unbalanced disc. Hence, the present invention advantageously determines maximum degree of vibration of the lens assembly 200 by setting the actuators in the optical pickup assembly 130 to operate at resonant frequency.
>
> "Returning now to FIG. 1, the RF amplifier 135 is a pre-amplifier for output signals from the optical pickup assembly 130 and provides the amplified output to the DSP 120. The RF amplifier 135 conditions the signal from the photodiodes A-F, and ensures a high signal-to-noise ratio of the signal sent to the DSP 120. In addition, the RF amplifier 135 incorporates automatic laser power control, and amplification of focus error and tracking error signals. In relation to the laser power, it is essential to maintain the light output level of the laser diode at a consistent level, which is achieved by monitoring a portion of the laser output via a monitor photo diode (not shown). The

> detected level is fed back through an automatic power control circuit within the RF amplifier 135, thereby stabilizing the light intensity of the laser diode."

It should be clear from the above that in Okazaki et al., RF amplifier 135 amplifies the output signal from the photodiodes A-F to "ensure a high signal-to-noise ratio". However, this relates to the **amplitude** of the signal to the **amplitude** of any noise that may be added to the signal from the photodiodes. This has nothing to do with the average bit-rate of the storage device, which concerns the rate at which the bits of data are being provided by the storage device.

Claim 4

Claim 4 includes the limitation "wherein the action comprises an act of providing a message to a user to reduce the vibrations."

The Examiner now states "Okazaki discloses wherein the action comprises an act of providing a message to a user to reduce the vibrations (see column 10 lines 20-27 where after the action is taken the speed of rotation is set to high or low depending the value of the vibration the user will be annoyance in form of noise and vibration as message)."

Appellants submit that the Examiner has mis-read (or has not read at all) Okazaki et al. In particular, the noted section of Okazaki et al. states:

> "However, when the vibration value measured at resonance is less than the predetermined vibration value limit, then the speed of rotation is set 480 to high-speed mode, and the drive 100 is set to high speed. Low-speed refers to the speed of rotation of an unbalanced disc that will not cause annoyance to the

> user in the form of noise and vibration. High-speed refers to the maximum rated speed of the drive."

It should be clear from the above that there is no "message to a user to reduce the vibrations." Rather, Okazaki et al. is reducing the vibrations to a level that will **not** annoy a user, by reducing the rotational speed of the unbalanced disc. Hence, there is no indication to the user.

Claim 5

Claim 5 includes the limitation "wherein the source of vibrations is a first loudspeaker, and the first loudspeaker and the storage device are contained in the same housing, wherein the action comprises an act of switching sound reproduction from the first loudspeaker to a second loudspeaker that is remote from the storage device."

The Examiner states "Kimura discloses wherein the source of vibrations is the first loudspeaker, and the loudspeaker and the storage device comprised in the same housing (e.g., see figure 2, elements 4B and 4A are loudspeaker in the same housing); wherein the action comprises an act of switching sound reproduction from the first loudspeaker to a second loudspeaker that is remote from the storage device (e.g., see column 4, lines 31-54)."

Appellants first would like to remind the Examiner that the present rejection is anticipation based on Okazaki et al., not Kimura. Further, even if one were to consider Kimura, it should be noted that the loudspeakers 4A and 4B of Kimura are both located in the same housing as the storage device (VCR), there is no disclosure of a second loudspeaker remote from the storage device, and there is no disclosure of switching sound reproduction from the co-located first loudspeaker to the remote second loudspeaker.

(B) Whether Claim 18 Is Anticipated By Kimura

35 U.S.C. 102(b) states:

> "A person shall be entitled to a patent unless —
>
> ***
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or...."

The Kimura patent discloses a television apparatus incorporating receiver and video tape recorder in a common cabinet, in which when vibrations in the cabinet exceed a particular level, if the VTR is in a recording mode, then the resulting recorded image may, when played back, exhibit "image shake" or distortion in the resulting displayed picture.

The Examiner now states:

> "As to claim 18, Kimure discloses Consumer electronics apparatus comprising: means for receiving a stream of audio-visual data; (a storage device arranged to store the stream of audiovisual data on a disk (see column 3, lines 60-67 and figure 2)."

It should be apparent that the Examiner is overlooking several limitations included in claim 18, including "the circuit as claimed in claim 17 for operating the storage device". Further, Kimura clearly states, at col. 3, lines 36-38, that the television receiver includes "a video recording and reproducing device, for example, constituted by an 8mm video tape recorder (VTR)". Nowhere is there any statement or suggestion of "a storage device for storing the stream of audio-visual data on a disk". Appellants

remind the Examiner that claim 17, from which claim 18 depends, specifically states "the circuit comprising a processor, characterized in that the processor is arranged to:

measure the signal performance of the storage device; and

when the measured signal performance of the storage device decreases below a pre-determined level, take action to reduce the influence of vibrations generated by the source of vibrations, wherein the performance of the storage device includes at least one of access time of the storage device, data access rate, and data storage rate."

Appellants assert that nowhere in Kimura is there any disclosure or suggestion of measuring the signal performance (of the storage device) and reducing the influence of vibration when the signal performance decreases below a pre-determined level.

The Examiner now states:

> "The applicant argues that Kimura fails to teach a circuit for operating the storage device. However, it is known that a storage device is accessed using a circuit, with storage device itself being comprised of circuitry."

Appellants respectfully notes that the Examiner is mis-reading Appellants' statement. In particular, Appellants never argued that Kimura fails to teach a circuit for operating the storage device. Rather, Appellants assert that Kimura fails to teach "the circuit as claimed in claim 17 for operating the storage device".

Appellants assert that Kimura fails to teach all of the limitations of claim 17 as well as claim 18, as noted in detail above.

(C) Whether Claims 8-10 and 16 Are Unpatentable Over Okazaki et al. In View Of Kimura

35 U.S.C. 103(a) states:

> "(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made."

The above arguments with respect to Okazaki et al. and Kimura are incorporated herein.

Claim 8

Claim 8 depends from claim 5 and includes the limitation: "the housing is a consumer electronics apparatus;

the storage device is arranged to record an incoming stream of audio-visual data;

the consumer electronics apparatus is arranged to reproduce the incoming stream of audio-visual data by means of a display screen and the loudspeaker; and

wherein the method further comprises acts of:

storing the incoming stream of audio-visual data on a disk by the storage device; and

reproducing the stored stream of audio-visual data stored on the disk by means of the display screen and the loudspeaker.

While Kimura discloses a consumer electronics (CE) apparatus, the storage device is arranged to record an incoming stream of audio-visual data, the CE apparatus is arranged to reproduce the stream of audio-visual data, and reproducing the audio-visual stream by a display screen and loudspeaker(s), and Okazaki et al. discloses storing an incoming stream of audio-visual data on a disk, Appellants submit that, as noted above, neither Okazaki et al. nor Kimura disclose or suggest the limitations of claim 5, from which claim 8 depends, nor claim 1, from which claim 5 depends.

Claim 16

Claim 16 depends from claim 1, and includes the limitation "wherein the action comprises an act of halting activities related to the storage device other than storage and retrieval of audio-visual data."

The Examiner has indicated that Okazaki discloses claim 1 (which Appellants contest as indicated above), but Okazaki et al. does not disclose the claim 16 limitation. The Examiner then states "Kimura discloses, wherein the action comprising an act of halting activities related to the storage device other than storage and retrieval of audio-visual data (see column 3, lines 60-67)."

Appellants submit that the Examiner is mistaken. In particular, col. 3, lines 58-67 of Kimura states:

> "However, in a television apparatus 1 of the type described above with reference FIG. 1, when the level of the audio output from the speakers 4A and 4B is increased, the housing or cabinet, chassis, component parts and the like of the apparatus may be made to mechanically vibrate at inherent resonant frequencies

> thereof which are included in the audio output. By reason of such vibrations, noise or distortions may appear in the reproduced picture, particularly when the vibrations are generated in the VTR 5."

It should be apparent that this section of Kimura merely acknowledges that vibrations from the loudspeakers in the CE apparatus cabinet may adversely affect the display of video signals on the contained display screen particular when the signals originate from the VTR 5. However, there is no disclosure or suggestion that the VTR is capable of performing other activities while recording or reproducing audio-visual signals, and as such, there is no disclosure or suggestion of halting these other activities as an act to reduce the influence of vibration on the storage device.

Based on the above arguments, Appellants believe that the subject invention is neither anticipated nor rendered obvious by the prior art and is patentable thereover. Therefore, Appellants respectfully request that this Board reverse the decisions of the Examiner and allow this application to pass on to issue.

Respectfully submitted,

by ___/Edward W. Goodman/_____
Edward W. Goodman, Reg. 28,613
Attorney

(viii) Claims Appendix

1. A method of operating a storage device sensitive to vibrations in an environment with a source of vibrations, characterized in that the method comprises the following acts:

measuring the signal performance of the storage device; and

when the measured signal performance of the storage device decreases below a pre-determined level, taking action to reduce the influence of vibrations generated by the source of vibrations, wherein the signal performance of the storage device includes at least one of access time of the storage device, data access rate, and data storage rate.

2. (Cancelled).

3. The method as claimed in claim 1, wherein the signal performance of the storage device is indicated by an average bit-rate of the storage device.

4. The method as claimed in claim 1, wherein the action comprises an act of providing a message to a user to reduce the vibrations.

5. The method as claimed in claim 1, wherein the source of vibrations is a first loudspeaker, and the first loudspeaker and

the storage device are contained in the same housing, wherein the action comprises an act of switching sound reproduction from the first loudspeaker to a second loudspeaker that is remote from the storage device.

6. The method as claimed in claim 1, wherein the source of vibrations is a loudspeaker, and the action comprises an act of reducing the volume of the sound produced by the loudspeaker.

7. The method as claimed in claim 1, wherein when the measured signal performance decreases below the pre-determined level and the environmental temperature of the storage device is above a further pre-determined level, no action is taken.

8. The method as claimed in claim 5, wherein:

the housing is a consumer electronics apparatus;

the storage device is arranged to record an incoming stream of audio-visual data;

the consumer electronics apparatus is arranged to reproduce the incoming stream of audio-visual data by means of a display screen and the loudspeaker; and

wherein the method further comprises acts of:

storing the incoming stream of audio-visual data on a disk by the storage device; and

reproducing the stored stream of audio-visual data stored on the disk by means of the display screen and the loudspeaker.

9. The method as claimed in claim 8, wherein the action to reduce the influence of vibrations generated by the source of vibrations comprises an act of advising a user to render the incoming stream of audio-visual data instead of the stored stream of audio-visual data.

10. A method as claimed in claim 5, wherein:

the housing is a consumer electronics apparatus arranged to reproduce audio-visual data;

the second loudspeaker is not contained in the consumer electronics apparatus, the second loudspeaker being connected to the consumer electronics apparatus; and

the action comprises acts of:

reducing reproduction of the audio-visual data through the first loudspeaker contained in the consumer electronics apparatus; and

starting or increasing reproduction of the audio-visual data through the second loudspeaker.

11. The method as claimed in claim 1, wherein:

the source of vibrations is comprised by a first apparatus and the storage device is comprised by a second apparatus;

the first and the second apparatus are connected through a network link; and

the action comprises an act of controlling the first apparatus by reducing the power of the vibrations caused by the source of vibrations.

12. The method as claimed in claim 1, wherein the predetermined level is replaced by a further lower predetermined level when the measured signal performance of the storage device is below the predetermined level for a predetermined period.

13. The method as claimed in claim 1, wherein the act of measuring the signal performance of the storage device comprises an act of keeping statistics on the signal performance of the storage device and the action is performed when the statistics drop below the predetermined level.

14. The method as claimed in claim 13, wherein the statistics includes one of average access time of the storage device, median access time of the storage device, standard deviation of the access time of the storage device, and average bit-rate of the storage device.

15. The method as claimed in claim 1, wherein the storage device is a disk drive.

16. The method as claimed in claim 1, wherein the action comprises an act of halting activities related to the storage device other than storage and retrieval of audio-visual data.

17. A circuit for operating a storage device in an environment with a source of vibrations, the circuit comprising a processor, characterized in that the processor is arranged to:

measure the signal performance of the storage device; and

when the measured signal performance of the storage device decreases below a pre-determined level, take action to reduce the influence of vibrations generated by the source of vibrations, wherein the performance of the storage device includes at least one of access time of the storage device, data access rate, and data storage rate.

18. A consumer electronics apparatus comprising:

means for receiving a stream of audio-visual data;

a storage device for storing the stream of audio-visual data on a disk;

a source of vibrations; and

the circuit as claimed in claim 17 for operating the storage device.

19. The consumer electronics apparatus as claimed in claim 18, wherein the source of vibrations is a disk drive arranged to spin a disk in operation.

20. The consumer electronics apparatus as claimed in claim 18, wherein the source of vibrations is a loudspeaker.

(ix) Evidence Appendix

There is no evidence which had been submitted under 37 C.F.R. 1.130, 1.131 or 1.132, or any other evidence entered by the Examiner and relied upon by Appellant in this Appeal.

(x) Related Proceedings Appendix

Since there were no proceedings identified in section (ii) herein, there are no decisions rendered by a court or the Board in any proceeding identified pursuant to paragraph (c)(1)(ii) of 37 C.F.R. 41.37.